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APPARATUS FOR TRANSPORTING MANUFACTURED HOUSING

S P E C I F I C A T I O N

Background of the Invention

Field of the Invention

The present invention relates generally to transporter systems for transporting factory built manufactured homes. More particularly, the invention concerns the transport of chassis systems that are a permanent part of factory-built manufactured homes.

Discussion of the Prior Art

In recent years factory built manufactured homes have become quite popular. These manufactured homes are typically quite large and comprise very heavy interconnected sections. For example factory built manufactured homes are typically constructed as single width homes, double width homes and triple width homes, some having a length in excess of 70 feet. As a general rule, the single width homes are about 12-16 feet wide, the double width homes are about 24-32 feet wide and the triple width homes are about 38-48 feet wide.

After a portion of a manufactured home has been constructed at the factory, it is generally transported by truck over public roads to its permanent homesite.

These home sections are typically quite large and can have and a width of on the order of 16 feet and a length in excess of 70 feet.

In the past, the coupler or hitch used on chassis systems for manufactured housing units consisted of a mobile home hitch of standard construction that was designed to connect to a 2 5/16 inch ball on the transport trucks. However, for the past several years, manufactured housing units have become so heavy that the standard type of mobile home hitch and screw jack is no longer practical. The alternative has been to use a pintle hook and heavy-duty jack stand. However this approach has proved to be very expensive and generally too costly for the industry. As will be better understood from the discussion that follows, the apparatus of the present invention comprises a hybrid attachment for use in the manufactured housing industry which is both inexpensive and meets the capacity requirements for heavier manufactured housing units.

Little work has been done in the past in attempting to design a suitable hitch for use in connection with trailers for transporting large and heavy manufactured housing units. However, U.S. patent No. 6,511,250 issued to Lindsay discloses a specialized type of hitch mechanism for use in connection with large transport carrier frames. More particularly this patent discloses a quick release mechanism for a detachable hitch assembly which comprises at least two receiving portions at-

tached to a cross member of a transport carrier frame in a spaced-apart relationship and corresponding mating portions attached to a detachable hitch assembly.

Summary of the Invention

It is an object of the present invention to provide a new and improved hitch assembly that is specially designed for transporting large and heavy manufactured housing units.

Another object of the invention is to provide a novel hitch assembly of the aforementioned character that is inexpensive and meets the capacity requirements for moving heavy manufactured housing units.

Another object of the invention is to provide a hitch assembly as described in the preceding paragraphs that is of a simple, but highly rugged construction.

Another object of the invention is to provide a hitch assembly of the class described that is easy to install on manufactured housing units of standard design. More particularly, the uniquely configured connector member of the hitch assembly of the invention, which is of a one piece unitary construction, includes angularly extending sides that define an included angle of approximately 50 or 60 degrees so that it can be interconnected with the structural members of standard, prior art hitch assemblies, which define a similar included angle.

Brief Description of the Drawings

Figure 1 is a generally perspective view of a manufactured housing chassis having the yoke or hitch assembly of the invention affixed thereto.

Figure 2 is an enlarged, generally perspective view of one form of the hitch assembly of the invention.

Figure 3 is a top plan view of a portion of the hitch assembly.

Figure 4 is a cross-sectional view taken along lines 4-4 of figure 3.

Figure 5 is a cross-sectional view taken along lines 5-5 of figure 4.

Figure 6 is a side-elevational view of the inner portion of the support tube assembly of the apparatus of the invention.

Figure 7 is a cross-sectional view taken along lines 7-7 of figure 6.

Discussion of the Invention

Referring to the drawings and particularly to figures 1 through 4, one form of the chassis of the present invention is there illustrated and generally designated by the numeral 14. As indicated by the dotted lines in figure 1, the frame portion

16 of the chassis 14 is specially constructed for transporting and supporting manufactured housing units which are a permanent part of the total structure and are of the general character illustrated by the dotted lines. The frame portion 16 includes a pair of a longitudinally extending, substantially parallel structural side members 18 and 20 and a transversally extending structural member(s) 22 that interconnects side members 18 and 20. A first set of wheels 24 is connected to side member 18 and a second set of wheels 26 is connected to side member 20. The novel hitch assembly of the invention, which is generally designated in the drawings by the numeral 28, is connected to transversally extending structural member 22 in the manner illustrated in figure 1.

As best seen in figures 1 and 2, hitch assembly 28 includes first and second angularly outwardly extending structural members 30 and 32. Each of these structural members, which is generally "I" shaped in cross section, has a first end portion 34 that is connected to transversally extending structural member 22 as by welding and a second end portion 36. As is generally standard in the industry, structural members 30 and 32 define therebetween an included angle "x" of approximately 60 degrees. It should be noted, however, that in some cases the structural members of certain prior art chassis define an angle of approximately 50 degrees.

Connected to end portions 36 of the outwardly extending structural members 30 and 32, as by welding, is a generally "V" shaped connector 38 that is formed in a one-piece unitary construction from a length of steel rod. As best seen in figure 3, connector 38 includes an apex portion 38a and first and second legs 38b and 38c, which hee define therebetween an included angle "y" of approximately 60 degrees. As shown in figures 2, 3 and 5, because the legs of connector member 38 extend rearwardly at the same angle as the structural members 30 and 32 extend forwardly, the connector member can be fitted snugly between structural members 30 and 32 and can be positioned and then welded in place to the central portion of the flanges and also to the upper flange portions 30a and 32a of the flanges.

Also forming a part of hitch assembly 28 is a generally lunette shaped element 40 that is connected to and spans first and second legs 38b and 38c of connector 38. In the present form of the invention the generally lunette shaped element comprises a generally cylindrically shaped bent rod of the configuration best seen in figures 2 and 3. In some instances the lunette-shaped element can comprise a generally square-shaped bent rod. As shown in figures 2 and 3, element 40 co-operates with apex 38a of connector 38 to form a semiround receiving eye 43 which is strategically sized to receive a conventional pintal hook provided on the towing vehicle.

In the present form of the invention, the hitch assembly 28 also includes first and second vertically spaced apart cross-braces 44 that are connected to and span structural members 30 and 32 at a first location rearwardly of lunette shaped member 40. As indicated in figure 4, cross-braces 44 here comprises steel angle mounts of conventional construction. A second, flat steel cross-brace 46 is also connected to and spans the lower flanges 30b and 32b of structural members 30 and 32 at a second location spaced apart from the first location and proximate the first ends 36 of the structural members.

Comprising a part of the hitch support standard of the apparatus of the invention for supporting the elevated forward end of the transport trailer is a first elongated tube 50 that is generally rectangular in cross section. Tube 50 is disposed between and is interconnected with cross braces 44 and 46. This strategic positioning of elongated tube 50 between the cross-braces significantly adds to the structural integrity of the hitch assembly. As indicated in figure 2, first elongated tube 50 is provided with a through bore 50a. As shown by the dotted lines in figure 4, a second elongated tube 52, which is also rectangular in cross section, is telescopically received within said elongated tube 50 and is slidably movable therewith into several positions. For a reason presently to be described, elongated tube 52 is provided with a plurality of spaced apart through bores 52a, 52b and 52c (see figures 6 and 7). Tubes 50 and 52 are shown in the drawings as being square in cross sec-

tion, but it is to be understood that the tubes could be round or rectangular in cross section.

As best seen in figure 4, a locking pin 56 is telescopically receivable within the bores formed in first and second elongated tubes 50 and 52 when a selected aperture in tube 52 is brought into alignment with aperture 50a provided in tube 50. In the present form of the invention locking pin 50 comprises a generally cylindrically shaped bent rod of the configuration shown in figure 4.

With the construction shown in the drawings, it is apparent that tube 52 can be moved telescopically upwardly and downwardly within tube 50 to selectively align a selected one of the apertures 52a, 52b and 52c provided in inner tube 52 and with aperture 50a provided in the outer tube 50. In this way the elevation of the forward end of the trailer unit can readily be adjusted.

Having now described the invention in detail in accordance with the requirements of the patent statutes, those skilled in this art will have no difficulty in making changes and modifications in the individual parts or their relative assembly in order to meet specific requirements or conditions. Such changes and modifications may be made without departing from the scope and spirit of the invention, as set forth in the following claims.